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| 10/817,564 | 04/01/2004 | David S. Graham | GRAMP005/P06002 | 3810 |

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| NGUYEN, JIMMY H | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/817,564 | GRAHAM, DAVID S. | |
| | Examiner | Art Unit | |
| | Jimmy H. Nguyen | 2629 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *16 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/16/2007 has been entered. Claims 1-38 are currently pending in the application. An action follows below:

### *Claim Objections*

2. Claim 28 is objected to because of the following informalities: "on:" in line 4 should be changed to -- on --, because of a typo. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 28-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As to claim 28, this claim recites the feature, "...the provided data input device comprising: providing a light source... and providing an optical detection device ... to the input device" presently recited in lines recited (see lines 1-8), which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which

it is most nearly connected, to make and/or use the invention. The disclosure, when filed, does not expressly disclose **how a data input device can provide a light source and an optical position detection device**, so as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As to claims 29-38, since these claims depend upon claim 28, these claims are rejected for the same reason set forth in claim 28 above.

***Notice to Applicants***

5. Note that, in order to overcome the above rejection under 35 U.S.C. 112, first paragraph, Applicant should amend claim 28 as the proposed claim 28 in the Interview Summary dated 4/16/2007.

6. Note that the cited disclosure of the cited reference(s) used in the below rejection(s) is at least one of plural places to support for the claimed feature. To fully understand the cited reference(s) regarding to the claimed feature(s), a read through the entire reference(s) is suggested to Applicant(s).

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 6-10, 12-15, 21, 22, 24-32, 35, 37 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Meadows (US 4,916,308).

As to claims 1, 24 and 28, Meadows discloses an apparatus and an associate method, the apparatus comprising a data input device (an optical touch panel; see Fig. 1; col. 2, line 51) including a light source (a source at least including elements 52, 74 and/or 58, 82; see Figs. 2-3) configured to generate a continuous lamina of light (continuous beam of light; see Figs. 2-3; col. 4, lines 10-27) and an optical position detection device (a device at least including elements 64, 80 and/or 70, 84; see Figs. 1-3) optically coupled to the lamina of light, and configured to detect data entries to the input device by determining the location of interrupts in the lamina caused when data is entered to the input device (see Figs. 1-3; col. 4, line 28 through col. 5, line 27; col. 5, line 61 through col. 6, line 4). Accordingly, all limitations of these claims are read in the Meadows reference.

As to claims 2 and 32, Meadows discloses the continuous lamina of light comprising a two-dimension XY plane defined by a first axis and a second axis (see Figs. 1-2).

As to claims 3 and 29, Meadows discloses the apparatus comprising a display screen (a LCD; see Fig. 1; col. 2, lines 50-60) and the lamina of light being positioned in the free space adjacent the display screen, whereby the lamina of light in the free space adjacent to the display screen is interrupted when data entries directed to the display screen are made by contacting the display screen (see Figs. 1-2; col. 5, line 61 through col. 6, line 4).

As to claims 6 and 38, since the light source of Meadows is capable of making parallel light beam (or light rays), the light source of Meadows may be considered as a collimated light source.

As to claim 7, Meadows discloses the lamina of light having a substantially homogeneous wavelength (see col. 4, lines 15-19).

As to claim 8, Meadows discloses the lamina of light having a wavelength determined by a Light Emitting Diode (col. 4, lines 15-19).

As to claim 9, Meadows discloses the lamina of light being continuously on during operation of the data input device (see col. 4, lines 15-19).

As to claims 10 and 35, Meadows discloses the lamina of light periodically cycled on and off during operation of the data input device (col. 4, lines 45-64).

As to claims 12 and 37, Meadows discloses the display screen of a data entry device (col. 6, lines 8-11). Further, note that one of the main functions of the touch panel is to provide the data input to a computer/display system.

As to claim 13, Meadows discloses the light source positioned on one side of the lamina of light opposed to the optical position detection device located on the opposite side of the lamina of light (see Figs. 1-3).

As to claim 14, Meadows discloses the light source generated from an LED (see col. 4, lines 15-19).

As to claim 15, Meadows discloses the optical position detection device comprising a light receiving array (Y-detector 64 or X-detector 70; see Figs. 1-3; col. 4, lines 34-35) configured to detect the position of an interrupt in the lamina of light caused during a data entry to the data input device (see col. 4, lines 45-64); and a processor (display controller 38; see Fig. 1) coupled to the light receiving array, the processor configured to calculate the coordinate of the interrupt on the lamina of light based on the position of the interrupt as detected by the light receiving array (see col. 5, line 61 through col. 6, line 4).

As to claims 21 and 30, Meadows discloses the lamina of light defines a two-dimensional plane and the optical position detection device further comprises a first light receiving array (Y-detector 64) positioned along one side of the lamina and a second light receiving array (X-detector 70) positioned along a second side of the lamina, wherein the first side and the second side are adjacent to one another (see Figs. 1-3).

As to claims 22 and 31, Meadows discloses a first light source (Y-emitter 52) and a second light source (X-emitter 58) positioned along a third side and an fourth side of the lamina, the third side and the fourth side being adjacent to one another and being opposite of the first side and the second side respectively (see Figs. 1-3).

As to claims 25-27, Meadows discloses all steps of these claims (see col. 4, line 10 through col. 6, line 4).

9. Claims 1-3, 6-19, 21, 22, 24-32, and 35-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Graham et al. (US 5,914,709), hereinafter Graham.

As to claims 1, 24 and 28, Graham discloses an apparatus and an associate method, the apparatus comprising a data input device (100/400) (see Figs. 1 and 4) comprising a light source (a source including at least elements 102, 104, 116 shown in Fig. 1 or at least elements 402 and 410/502/624 shown in Figs. 4, 5, 6B, 6E, 7A) configured to generate **a continuous lamina of light (a single beam of light 418/508**; see Figs. 4 and 5) and an optical position detection device (a device including at least elements 118, 110, 112 shown in Fig. 1, or at least elements 406, 408 and 412, 424 and/or 416, 428 shown in Fig. 4) optically coupled to the lamina of light (418/508), and configured to detect data entries to the input device by determining the location of interrupts

in the lamina caused when data is entered to the input device (see Figs. 1 and 4, col. 4, lines 21-34).

As to claims 2 and 32, Graham discloses the lamina of light (a beam of light 418/508) comprising a one-dimension plane defined by a first axis (see Fig. 4).

As to claims 3 and 29, Graham discloses the apparatus comprising a display screen (108/208) (see Fig. 1, col. 4, line 31) and the lamina of light being positioned in the free space adjacent the display screen, whereby the lamina of light in the free space adjacent to the display screen is interrupted when data entries directed to the display screen are made by contacting the display screen (see Figs. 1 and 4, col. 4, lines 21-67).

As to claims 6 and 38, Graham discloses the lamina of light generated from a collimated light source (102, 104, 116/402, 410, 422) (see Figs. 1 and 4, col. 4, lines 9-46, col. 6, line 65 through col. 7, line 24).

As to claim 7, Graham discloses the lamina of light has wavelength range of 0.38 to 1.10 micrometers (see col. 7, lines 15-24).

As to claim 8, Graham discloses the lamina of light has a wavelength determined by a Light Emitting Diode (col. 7, lines 12-24).

As to claim 9, Graham discloses the lamina of light being continuously on during operation of the data input device (see col. 12, lines 23-51).

As to claims 10 and 35, Graham discloses the lamina of light is periodically cycled on and off during operation of the data input device (col. 12, lines 5-22).

As to claims 11 and 36, Graham discloses a filter device for carrying a threshold adjustment processing, which is configured to subtract the measured ambient light during an off

cycle of the lamina of light from the measured light during an on cycle of the lamina of light (see col. 11, line 61 through col. 12, line 22).

As to claims 12 and 37, Graham discloses the display screen (208) of a personal computer (200) (see Fig. 2).

As to claim 13, Graham discloses a light source configured to generate the lamina of light, the light source positioned on one side of the lamina of light opposed to the optical position detection device located on the opposite side of the lamina of light (see Fig. 4).

As to claim 14, Graham discloses the light source generated from a light source (102) with a lens (116) (see Fig. 1) or an LED (700) with a lens (702) (see Fig. 7A).

As to claims 15-17, Graham discloses the optical position detection device comprising a light receiving array (412, 424, 416, 428) configured to detect the position of an interrupt in the lamina of light caused during a data entry to the data input device (see Fig. 4); and a processor (406, 408), coupled to the light receiving array, the processor configured to calculate the coordinate of the interrupt on the lamina of light based on the position of the interrupt as detected by the light receiving array (see col. 6, line 6 through col. 7, line 50). Graham further teaches the light receiving array (412, 424, 416, 428) being a waveguide substrate (best seen in Figs. 5 and 6A, elements 504/600), which includes a plurality of waveguide channels (604-612, see Fig. 6A), each waveguide channel (604-612) having a light input end proximate the lamina of light and an output end (see Fig. 6A); and a plurality of photosensitive elements, each photosensitive element positioned proximate the output end of one of the waveguide channels, and configured to convert a light signal received through the waveguide channel and to convert it into an electrical signal

(see col. 7, lines 30-50). Graham teaches that the photosensitive elements can be charge coupled devices or CMOS imaging devices (see col. 7, lines 38-50).

As to claims 18 and 19, Graham discloses the light receiving array comprising lens (46, 428) including a plurality of light receiving elements configured to direct incident light from the lamina into the light input end of each of the plurality of waveguide channels respectively (see Figs. 1 and 4). Further, Graham discloses the light receiving array comprising including a plurality of light receiving elements (microlens 1112, see Fig. 11B) configured to direct incident light from the lamina into the light input end of each of the plurality of waveguide channels respectively (see Figs. 11B, col. 13, lines 24-64).

As to claims 21 and 30, Graham discloses the lamina of light defines a two-dimensional plane and the optical position detection device further comprises a first light receiving array (412, 424) positioned along one side of the lamina and a second light receiving array (416, 428) positioned along a second side of the lamina, wherein the first side and the second side are adjacent to one another (see Fig. 4).

As to claims 22 and 31, Graham discloses As shown in Fig. 4, Graham discloses a first light source (402, 410, 422) and a second light source (404, 414, 426) positioned along a third side and an fourth side of the lamina, the third side and the fourth side being adjacent to one another and being opposite of the first side and the second side respectively.

As to claims 25-27, Graham discloses all steps of these claims (see col. 6, line 25 through col. 7, line 29).

10. Claims 1-3, 6-9, 12-22, 24, 28-32, 37, and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Francis et al. (US 6,181,842 B1), hereinafter Francis.

As to claims 1, 24 and 28, Francis discloses an apparatus and an associate method, the apparatus (see Figs. 1A and 7) comprising a data input device (a digitizer 10, see Fig. 1A) including a light source (a light source including at least elements 13/23/33, 13A/28/38 and 14 shown in Figs. 1A, 2A and 3) configured to generate **a continuous lamina of light (a single beam of light** 15X/15Y outputted from a **single** waveguide 13/23/33 and a **single** corresponding optical system 28/38; see Fig. 2A and 3) and an optical position detection device (a device including at least elements 16/36, 17 and 19/39 shown in Figs. 1A and 3) optically coupled to the lamina of light (a single beam of light), and configured to detect data entries to the input device by determining the location of interrupts in the lamina caused when data is entered to the input device (see col. 5, lines 21-38).

As to claims 2 and 32, Francis discloses the lamina of light comprising a one-dimension plane defined by a two-dimensional plane defined by a first axis and a second axis (see Fig. 1A).

As to claims 3 and 29, Francis discloses the apparatus comprising a display screen (display monitor 70M, see Fig. 7, col. 9, lines 37-52) and the lamina of light being positioned in the free space adjacent the display screen, whereby the lamina of light in the free space adjacent to the display screen is interrupted when data entries directed to the display screen are made by contacting the display screen (see Figs. 1A and 7, col. 9, lines 37-52).

As to claims 6 and 38, Francis discloses the lamina of light generated from a collimated light source (14) (see col. 9, line 55 through col. 10, line 2).

As to claim 7, Francis discloses the lamina of light has a substantially homogeneous wavelength (see col. 9, line 66 through col. 10, line 2).

As to claim 8, Francis discloses the lamina of light has a wavelength determined by an Light Emitting Diode (see col. 9, line 66 through col. 10, line 2).

As to claim 9, Francis discloses the lamina of light being continuously on during operation of the data input device (see col. 4, line 60 through col. 5, line 20).

As to claims 12 and 37, Francis discloses the display screen (70M) of an inherent computer system.

As to claim 13, Francis discloses a light source configured to generate the lamina of light, the light source positioned on one side of the lamina of light opposed to the optical position detection device located on the opposite side of the lamina of light (see Fig. 1A).

As to claim 14, Francis discloses the light source generated from a light source (14) with a lens (28) (see Fig. 2A).

As to claims 15-17, Francis discloses the optical position detection device comprising a light receiving array (16, 19) (see Fig. 1A) configured to detect the position of an interrupt in the lamina of light caused during a data entry to the data input device (see col. 5, lines 21-38); and a processor (406, 408), coupled to the light receiving array, and an inherent processor configured to calculate the coordinate of the interrupt on the lamina of light based on the position of the interrupt as detected by the light receiving array. Francis further teaches the light receiving array (16, 19) being a waveguide substrate (see Fig. 1a), which includes a plurality of waveguide channels (see Fig. 1A), each waveguide channel having a light input end proximate the lamina of light and an output end (see Fig. 1A); and a plurality of photosensitive elements (detector cells, see col. 10, lines 15-17), each photosensitive element positioned proximate the output end of one of the waveguide channels, and configured to convert a light signal received through the

waveguide channel and to convert it into an electrical signal (see col. 10, lines3-18). Francis teaches that the photosensitive elements can be charge coupled devices CCDs or CMOS imaging devices (see col. 10, lines 15-17).

As to claims 18 and 19, Francis discloses the light receiving array comprising lens (39) (see Fig. 3) including a plurality of light receiving elements configured to direct incident light from the lamina into the light input end of each of the plurality of waveguide channels respectively (see Figs. 1 and 4).

As to claim 20, Francis discloses the optical position detection device including a light filter (17F) to filter a selected wavelength of light from the lamina.

As to claims 21 and 30, Francis discloses the lamina of light defines a two-dimensional plane and the optical position detection device further comprises a first light receiving array (16X, 19X) positioned along one side of the lamina and a second light receiving array (16Y, 19Y) positioned along a second side of the lamina, wherein the first side and the second side are adjacent to one another (see Fig. 1A).

As to claims 22 and 31, as shown in Fig. 1A, Francis discloses a first light source (13X, 14X) and a second light source (13Y, 14Y) positioned along a third side and an fourth side of the lamina, the third side and the fourth side being adjacent to one another and being opposite of the first side and the second side respectively.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 4, 5, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meadows.

As to claims 4, 5, 33 and 34, as discussed in the rejection above, Meadows discloses all the claimed limitations except for Meadows is silent to the light intensity being substantially uniform or substantially non-uniform, as presently claimed. The above underlined limitations are held to be that of mere design choice inasmuch as there are neither specific purposes nor any specific problems solved thereby. Accordingly, while Meadows may not expressly disclose the light intensity being uniform or non-uniform, as presently claimed; however, one of ordinary skill in the art would have been found it obvious to utilize the lamina of light being either substantially uniform intensity or substantially non-uniform intensity, as the intensity of the light is higher than the light activation threshold of the light detecting elements in order to determine whether the light is blocked, in accordance with a particular application.

13. Claims 11, 16-19 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meadows, and further in view of Graham.

As to claims 11 and 36, as discussed in the rejection to claims 1 and 35 above, Meadows discloses all the claimed limitations except for a subtraction device, as presently claimed.

However, Graham discloses the optical position detection device comprising a subtraction device (ASIC 720, see Fig. 7C) for carrying a threshold adjustment processing, which is configured to subtract the measured ambient light during an off cycle of the lamina of light from the measured light during an on cycle of the lamina of light (see col. 11, line 6 through col. 12, line 22). It would have been obvious to a person of ordinary skill in the art at the time of

the invention was made to modify the display controller of Meadows so as to subtract the measured ambient light during an off cycle of the lamina of light from the measured light during an on cycle of the lamina of light, in view of the teaching in the Graham reference, because the input device would operate in a reliable manner without regard to ambient light conditions or changes thereto, as taught by Graham (see col. 12, lines 18-22).

As to claim 16, Meadows further teaches the light receiving array (64/70) comprising a plurality of photosensitive elements converting a light signal received into an electrical signal (see col. 4, lines 28-44). Accordingly, Meadows discloses all the claimed limitations except for a waveguide substrate including a plurality of waveguide channels, as presently claimed.

However, Graham discloses the optical position detection device comprising a light receiving array (412, 424, 416, 428) configured to detect the position of an interrupt in the lamina of light caused during a data entry to the data input device (see Fig. 4). Graham further teaches the light receiving array (412, 424, 416, 428) being a waveguide substrate (best seen in Figs. 5 and 6A, elements 504/600), which includes a plurality of waveguide channels (604-612, see Fig. 6A), each waveguide channel (604-612) having a light input end proximate the lamina of light and an output end (see Fig. 6A); and a plurality of photosensitive elements, each photosensitive element positioned proximate the output end of one of the waveguide channels, and configured to convert a light signal received through the waveguide channel and to convert it into an electrical signal (see col. 7, lines 30-50). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to replace the light receiving array of Meadows with the wave guide substrate of Graham, in view of the teaching in the Graham

reference, because this would enhance the operation of the user input device, as taught by Graham (see col. 2, lines 1-4).

As to claim 17, Graham teaches that the photosensitive elements can be charge coupled devices or CMOS imaging devices (see col. 7, lines 38-50).

As to claims 18 and 19, Graham discloses the light receiving array comprising lens (46, 428) including a plurality of light receiving elements configured to direct incident light from the lamina into the light input end of each of the plurality of waveguide channels respectively (see Figs. 1 and 4). Further, Graham discloses the light receiving array comprising including a plurality of light receiving elements (microlens 1112, see Fig. 11B) configured to direct incident light from the lamina into the light input end of each of the plurality of waveguide channels respectively (see Figs. 11B, col. 13, lines 24-64).

14. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meadows, and further in view of Francis.

As to claim 20, as discussed in the rejection to claim 15 above, Meadows discloses all the claimed limitations except for a light filter, as presently claimed.

However, Francis discloses a related apparatus comprising an optical position detection device (17) including a light filter (17F) to filter a selected wavelength of light from the lamina (see Fig. 1A, col. 10, line 55 through col. 11, line 38). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide the light filter in the optical position detection device of Meadows, in view of the teaching in the Francis reference, because this would remove any unwanted wavelengths, as taught by Francis (see col. 10, lines 56-58).

15. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Meadows, and further in view of Hoshino et al. (USPUB: 2002/0030668 A1), hereinafter Hoshino.

As to claim 23, as discussed in the rejection to claim 1 above, Meadows discloses all the claimed limitations except for a sleep mode element, as presently claimed.

However, Hoshino teaches an apparatus configured to enter a standby mode (i.e., the claimed sleep mode) and to reduce the quantity of light emitting device if a fingertip is not touching the fingerplate (see paragraph 0108), i.e., Hoshino teaches the feature, "a sleep mode ... of time" in lines 1-3 of claim 23. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide a sleep mode (or a standby mode) in the apparatus of Meadows, in view of the teaching in the Hoshino reference, because this would reduce the power consumption, as taught by the Hoshino reference (see paragraph 0108).

16. Claims 4, 5, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Graham.

As to claims 4, 5, 33 and 34, as discussed in the rejection above, Graham discloses all the claimed limitations except for Graham is silent to the light intensity being substantially uniform or substantially non-uniform, as presently claimed. However, Graham further discloses that the intensity of the light should be higher than the light activation threshold of the light detecting elements in order to determine whether the light is blocked (see col. 4, lines 16-19 and col. 11, lines 34 through col. 12, line 22). The above underlined limitations are held to be that of mere design choice inasmuch as there are neither specific purposes nor any specific problems solved thereby. Accordingly, while Graham may not expressly disclose the light intensity being uniform or non-uniform, as presently claimed; however, one of ordinary skill in the art would have been

found it obvious to utilize the lamina of light being either substantially uniform intensity or substantially non-uniform intensity, as the intensity of the light is higher than the light activation threshold of the light detecting elements in order to determine whether the light is blocked, in accordance with a particular application.

17. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graham, and further in view of Francis.

As to claim 20, as discussed in the rejection to claim 15 above, Graham discloses all the claimed limitations except for a light filter, as presently claimed.

However, Francis discloses a related apparatus comprising an optical position detection device (17) including a light filter (17F) to filter a selected wavelength of light from the lamina (see Fig. 1A, col. 10, line 55 through col. 11, line 38). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide the light filter in the optical position detection device of Graham, in view of the teaching in the Francis reference, because this would remove any unwanted wavelengths, as taught by Francis (see col. 10, lines 56-58).

18. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Graham, and further in view of Hoshino et al. (USPUB: 2002/0030668 A1), hereinafter Hoshino.

As to claim 23, as discussed in the rejection to claim 1 above, Graham discloses all the claimed limitations except for a sleep mode element, as presently claimed.

However, Hoshino teaches an apparatus configured to enter a standby mode (i.e., the claimed sleep mode) and to reduce the quantity of light emitting device if a fingertip is not touching the fingerplate (see paragraph 0108), i.e., Hoshino teaches the feature, "a sleep mode ...

of time" in lines 1-3 of claim 23. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide a sleep mode (or a standby mode) in the apparatus of Graham, in view of the teaching in the Hoshino reference, because this would reduce the power consumption, as taught by the Hoshino reference (see paragraph 0108).

19. Claims 4, 5, 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Francis.

As to claims 4, 5, 33 and 34, as discussed in the rejection above, Francis discloses all the claimed limitations except for Graham is silent to the light intensity being substantially uniform or substantially non-uniform, as presently claimed. However, Francis's the intensity of the light should be higher than the light activation threshold of the light detecting elements in order to determine whether the light is blocked. The above underlined limitations are held to be that of mere design choice inasmuch as there are neither specific purposes nor any specific problems solved thereby. Accordingly, while Francis may not expressly disclose the light intensity being uniform or non-uniform, as presently claimed; however, one of ordinary skill in the art would have been found it obvious to utilize the lamina of light being either substantially uniform intensity or substantially non-uniform intensity, as the intensity of the light is higher than the light activation threshold of the light detecting elements in order to determine whether the light is blocked, in accordance with a particular application.

20. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Francis, and further in view of Hoshino.

As to claim 23, as discussed in the rejection to claim 1 above, Francis discloses all the claimed limitations except for a sleep mode element, as presently claimed.

However, Hoshino teaches an apparatus configured to enter a standby mode (i.e., the claimed sleep mode) and to reduce the quantity of light emitting device if a fingertip is not touching the fingerplate (see paragraph 0108), i.e., Hoshino teaches the feature, "a sleep mode ... of time" in lines 1-3 of claim 23. It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide a sleep mode (or a standby mode) in the apparatus of Francis, in view of the teaching in the Hoshino reference, because this would reduce the power consumption, as taught by the Hoshino reference (see paragraph 0108).

***Double Patenting***

21. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

22. Claims 1-3, 8, 14, 15, 28, 29 and 32 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 8-10, 13-16 and 29 of U.S. Patent No. 7,099,553 B1, hereinafter PAT553. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the claimed limitations of

the pending claims are recited in claims 1, 8-10 and 13-16 of the PAT553 reference, such as, an apparatus, a data input device, an optical position detection device, a light source for generating lamina of light, a display screen, a light receiving array, and a processor, as presently claimed.

**23. Note that in order to fully respond, Applicant should either file a Terminal Disclaimer or provide an argument to the double patenting rejection.**

***Response to Arguments***

24. Applicant's arguments filed 04/16/2007 have been fully considered but they are not fully persuasive as follows:

With respect to the drawing objection, specification objection, claim objection, rejections under 35 USC 112, first and second paragraphs, in the Office Action dated 1/31/2007, These objections and rejections are hereby withdrawn in light of the amendment filed on 04/16/2007.

Applicant's arguments with respect to the rejections under 35 USC 102(b) in the Office action dated 1/31/2007, have been considered but are moot in view of the new ground(s) of rejection above.

***Conclusion***

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Muraoka (US 6,538,644 B1) discloses an apparatus and an associate method, the apparatus comprising a data input device including a light source (111, 112 and/or 121, 122; see Fig. 1) configured to generate a continuous lamina of light (continuous beam of light; see Figs. 2-3; col. 4, lines 10-27) and an optical position detection device (113, 114 and/or 123/124; see Fig. 1) optically coupled to the lamina of light, and configured to detect data entries to the input

device by determining the location of interrupts in the lamina caused when data is entered to the input device.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is 571-272-7675. The examiner can normally be reached on Monday - Friday, 6:30 a.m. - 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JHN
May 24, 2007

Jimmy H. Nguyen
Primary Examiner
Technology Division: 2629